

# Non-rotating product introduction

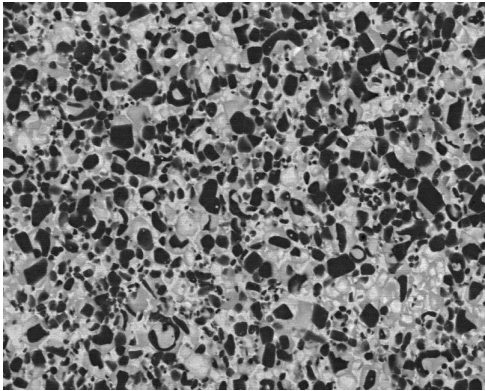
难加工材料切削专家  
THE EXPERT OF DIFFICULT MACHINING

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# 02

## Cermet



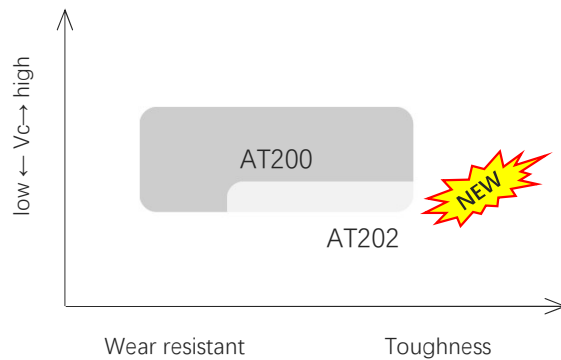


## High stability

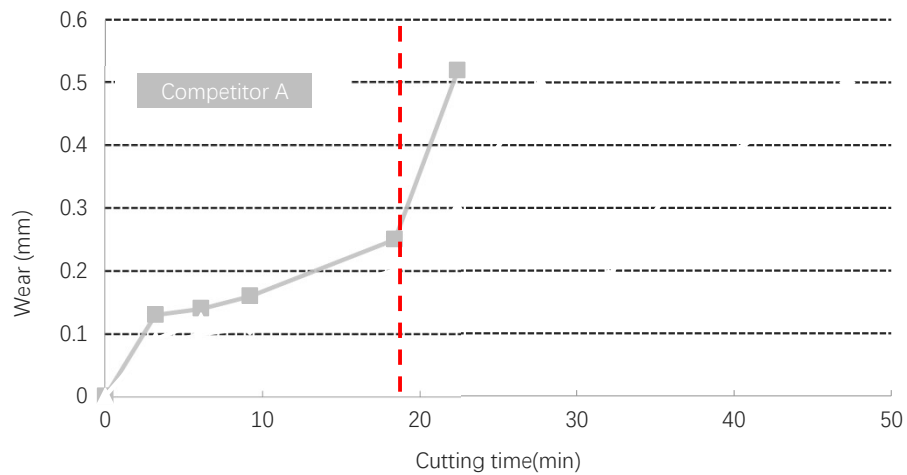
The hot hardness and thermal shock resistance are greatly improved. Therefore, constant tool life can be obtained under difficult cutting conditions.

## Excellent performance

Edge chipping is minimized for excellent cutting performance.



|   | Material                                              | Hardness      | Cutting speed (ft/min) |
|---|-------------------------------------------------------|---------------|------------------------|
| P | Soft steel<br>ASTM A36,<br>C10...                     | HB $\leq$ 180 | 492-984                |
|   | Carbon steel<br>Alloyed<br>steel<br>C45,<br>40CrMo... | HB $\geq$ 180 | 393-853                |



Cutting data:

Insert: CNMG 120408\*\*

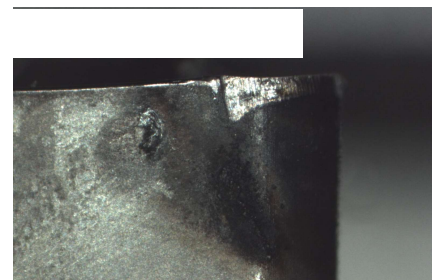
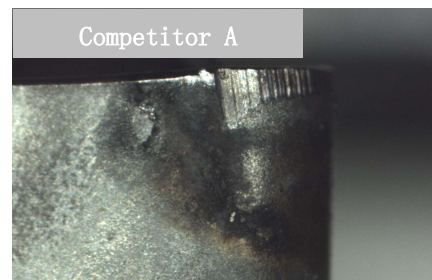
Material: 40CrNiMoA

Cutting speed:  $V_c = 820$  in/min

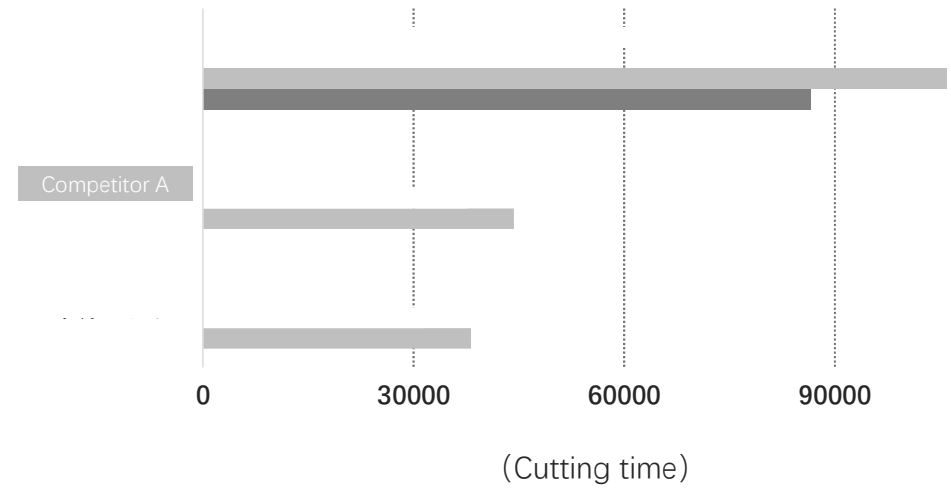
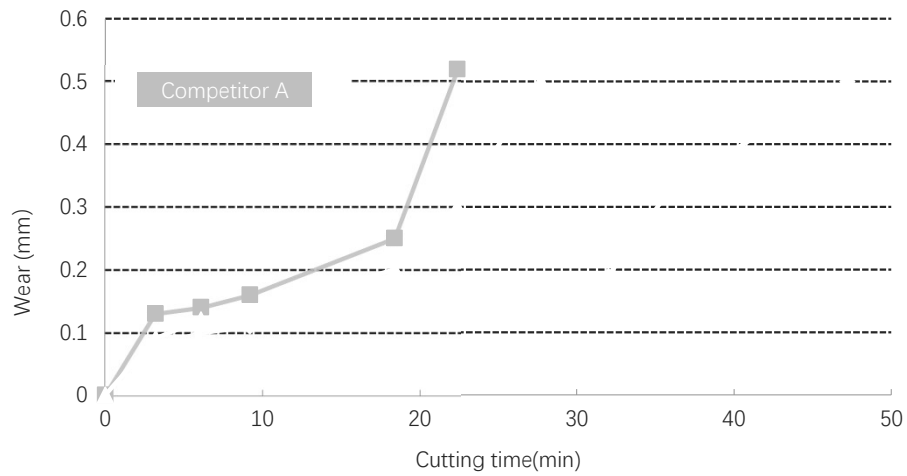
Coolant: emulsion

Feed:  $f = 0.008$  in/rev

Cutting depth:  $a_p = 0.039$  in



Cutting time 18.4min



#### Cutting data:

Insert: CNMG 120408\*\* Material: 40CrNiMoA

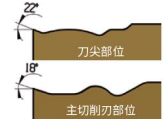
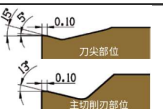
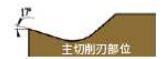
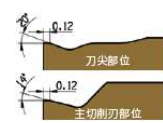
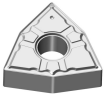
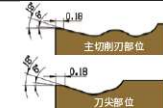
Cutting speed:  $V_c=656$  in/min Coolant: Dry

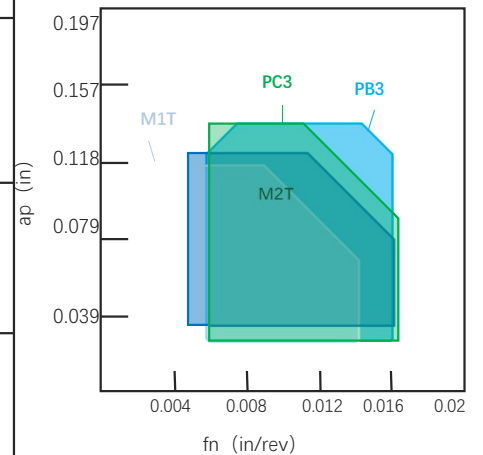
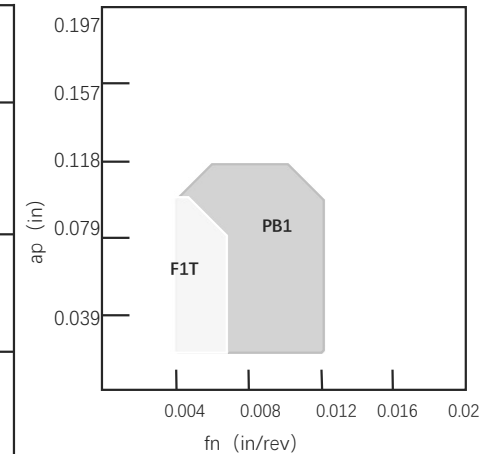
Feed:  $f=0.008$  in/rev

Cutting depth:  $a_p=0.039$  in

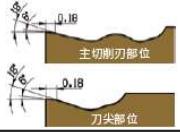
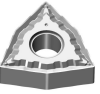
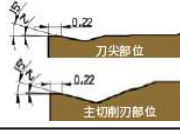
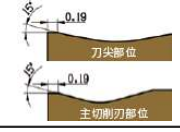
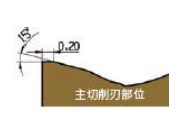


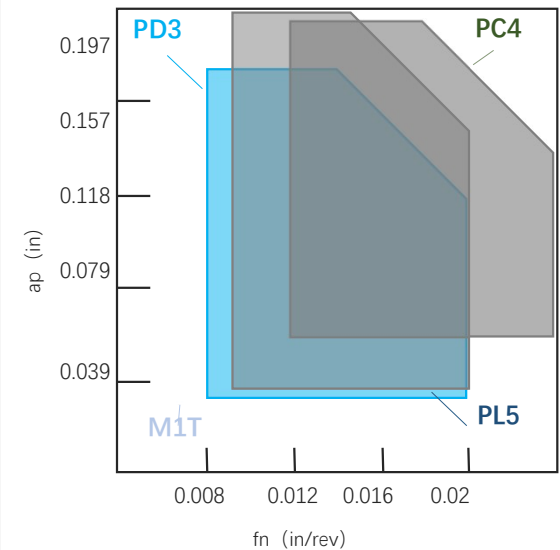
## Chip breakers - Negative

| Application    | Chip breaker |                                                                                     | Features                                                                                                                                     | Cross section                                                                         |
|----------------|--------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Finishing      | F1T          |    | Finish machining. Very good chip control at small cutting depth                                                                              |    |
|                | PB1          |    | General purpose finish geometry. Good stability                                                                                              |    |
| Semi-finishing | M1T          |    | Big positive rake angle, low cutting force, suitable for different cutting depth                                                             |    |
|                | PB3          |    | First choice for steel semi-finishing turning, can be used in profile turning with different cutting depth, and offer excellent chip control |    |
|                | M2T          |  | Designed for low cutting force, combined strengthened cutting edge. Suitable for medium turning with big cutting depth.                      |  |
|                | PC3          |  | 2nd choice for steel semi-finish turning                                                                                                     |  |

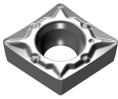
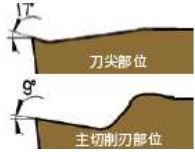
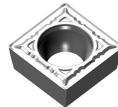
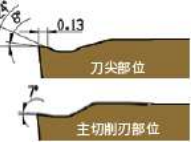
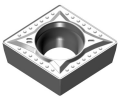
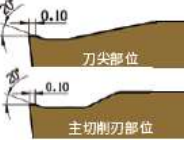
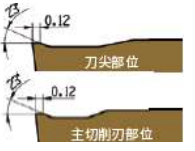


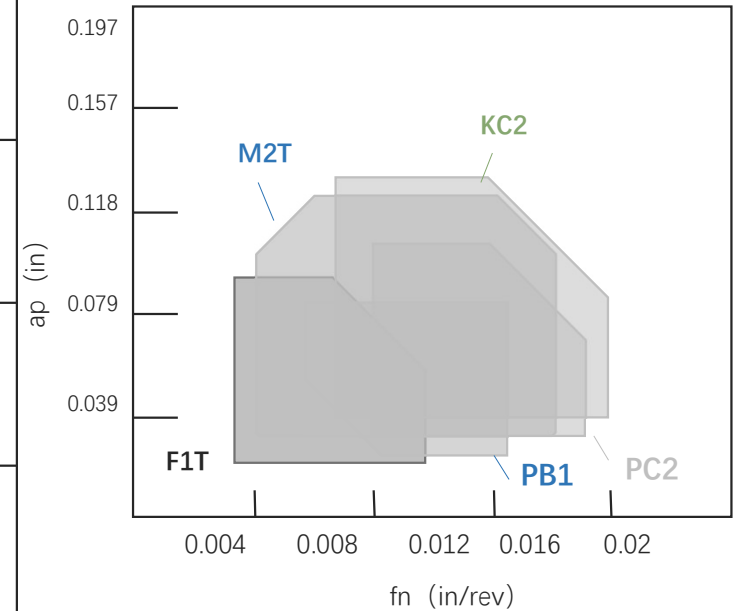
## Chip breakers - Negative

| Application | Chip breaker |                                                                                     | Features                                                                                                 | Cross section                                                                         |
|-------------|--------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Medium      | PD3          |    | Guaranteed stability, stronger cutting edge, can be used in interrupted turning                          |    |
|             | M3T          |    | Smooth rake surface, suitable for medium turning with high feed rate.                                    |    |
|             | PC4          |    | Reduced cutting force, suitable for steel and cast iron general purpose machining                        |    |
|             | PL5          |   | Suitable for medium machining with low cutting force, big cutting depth. Suitable for long shaft turning |   |
| Profiling   | BS           |  | Suitable for profile turning with changing cutting depth. Smooth chip evacuation                         |  |



## Chip breakers - Positive

| Application | Chip breaker |                                                                                     | Features                                                                            | Cross section                                                                         |
|-------------|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Finishing   | F1T          |    | Low cutting force, excellent chip control                                           |    |
|             | PB1          |    | General purpose geometry for finish machining with good stability                   |    |
| Semi-finish | PC2          |    | 1 <sup>st</sup> choice for semi-finish turning. Good edge strength and chip control |    |
|             | M2T          |  | Designed for high feed turning with smooth chip evacuation                          |   |
|             | KC2          |  | Big chip breaker design, suitable for machining with big cutting depth              |  |





## Success story

|              |                      |
|--------------|----------------------|
| Industry     | General machinery    |
| Workpiece    | hydraulic fittings   |
| Material     | C45 (cold extrusion) |
| Test purpose | Replacement          |
| Machine      | Lathe                |

|                          |                      |                                                               |
|--------------------------|----------------------|---------------------------------------------------------------|
| Current tool             | Insert               | TNMG160404-HQ TN60                                            |
|                          | Holder               |                                                               |
| Tool life                | <b>20~30pcs/edge</b> |                                                               |
| $vc$ (ft/min)            | 1312                 | High speed, big cutting depth and high surface finish request |
| $N$ (min <sup>-1</sup> ) | 1600                 |                                                               |
| $f$ (in/rev)             | 0.004                |                                                               |
| $F$ (in/min)             | 5.5                  |                                                               |
| $ap$ (in)                | 0.08                 |                                                               |
| Coolant                  | Emulsion             |                                                               |

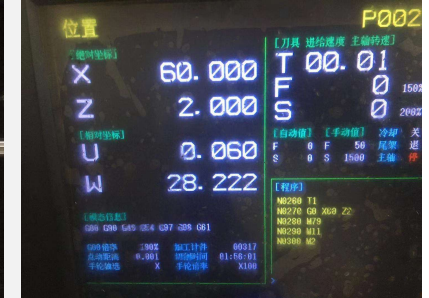


|                          |                   |                                            |
|--------------------------|-------------------|--------------------------------------------|
| <b>Achteck tool</b>      | Insert            | TNMG160404E-PB1 AT202                      |
|                          | Holder            |                                            |
| Tool life                | <b>27pcs/edge</b> |                                            |
| $vc$ (ft/min)            | 1312              | Similar tool life with better chip control |
| $N$ (min <sup>-1</sup> ) | 1600              |                                            |
| $f$ (in/rev)             | 0.004             |                                            |
| $F$ (in/min)             | 5.5               |                                            |
| $ap$ (in)                | 0.08              |                                            |
| Coolant                  | Emulsion          |                                            |

## Success story

|              |                   |
|--------------|-------------------|
| Industry     | General machinery |
| Workpiece    | Bar               |
| Material     | C45               |
| Test purpose | Tooling cost      |
| Machine      | Lathe             |

|                        |                        |                 |
|------------------------|------------------------|-----------------|
| Current tool           | Insert                 | TNMG 160404R-VF |
|                        | Holder                 |                 |
| Tool life              | <b>100~120pcs/edge</b> |                 |
| vc (ft/min)            | <b>590</b>             |                 |
| N (min <sup>-1</sup> ) |                        |                 |
| f (in/rev)             | <b>0.012</b>           |                 |
| F (in/min)             |                        |                 |
| ap (in)                | <b>0.059</b>           |                 |
| Coolant                | <b>Emulsion</b>        |                 |



|                        |                        |                                                                                                                                                                                      |
|------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Achteck tool</b>    | Insert                 | TNMG 160404R-M1T AT202                                                                                                                                                               |
|                        | Holder                 |                                                                                                                                                                                      |
| Tool life              | <b>150~170pcs/edge</b> |                                                                                                                                                                                      |
| vc (ft/min)            | <b>590</b>             | <p>2 pcs inserts were tested, and tool life of 6 edges were better than the current insert</p>  |
| N (min <sup>-1</sup> ) |                        |                                                                                                                                                                                      |
| f (in/rev)             | <b>0.012</b>           |                                                                                                                                                                                      |
| F (in/min)             |                        |                                                                                                                                                                                      |
| ap (mm)                | <b>0.059</b>           |                                                                                                                                                                                      |
| Coolant                | <b>Emulsion</b>        |                                                                                                                                                                                      |

## Success story

|              |                   |
|--------------|-------------------|
| Industry     | General machinery |
| Workpiece    | Bar               |
| Material     | C45               |
| Test purpose | Tooling cost      |
| Machine      | Lathe             |

|                          |                     |                                |
|--------------------------|---------------------|--------------------------------|
| Current tool             | Insert              | TNMG 160404R-VF CT3000         |
|                          | Holder              |                                |
| Tool life                | <b>1100pcs/edge</b> |                                |
| $vc$ (ft/min)            | <b>203</b>          | The best tool life was 1100pcs |
| $N$ (min <sup>-1</sup> ) |                     |                                |
| $f$ (in/rev)             | <b>0.013</b>        |                                |
| $F$ (in/min)             |                     |                                |
| $ap$ (in)                | <b>0.039</b>        |                                |
| Coolant                  | <b>Dry</b>          |                                |



|                          |                      |                                         |
|--------------------------|----------------------|-----------------------------------------|
| <b>Achteck tool</b>      | Insert               | TNMG 160404R-M1T AT202                  |
|                          | Holder               |                                         |
| Tool life                | <b>1500+pcs/edge</b> |                                         |
| $vc$ (ft/min)            | <b>203</b>           | After 1500pcs, cutting edge is still OK |
| $N$ (min <sup>-1</sup> ) |                      |                                         |
| $f$ (in/rev)             | <b>0.013</b>         |                                         |
| $F$ (in/min)             |                      |                                         |
| $ap$ (in)                | <b>0.039</b>         |                                         |
| Coolant                  | <b>Dry</b>           |                                         |



## Success story

|              |                   |
|--------------|-------------------|
| Industry     | General machinery |
| Workpiece    |                   |
| Material     | C25               |
| Test purpose | Tooling cost      |
| Machine      | Lathe             |

|                          |                        |                        |
|--------------------------|------------------------|------------------------|
| Current tool             | Insert                 | WNMG 080404-MT CT3000  |
|                          | Holder                 |                        |
| Tool life                | <b>400-500pcs/edge</b> |                        |
| $vc$ (ft/min)            | <b>656</b>             | Tool life was constant |
| $N$ (min <sup>-1</sup> ) |                        |                        |
| $f$ (in/rev)             | <b>0.006</b>           |                        |
| $F$ (in/min)             |                        |                        |
| $ap$ (in)                | <b>0.02~0.039</b>      |                        |
| Coolant                  | <b>Emulsion</b>        |                        |



|                          |                    |                       |
|--------------------------|--------------------|-----------------------|
| <b>Achteck tool</b>      | Insert             | WNMG 080404-M3T AT202 |
|                          | Holder             |                       |
| Tool life                | <b>957pcs/edge</b> |                       |
| $vc$ (ft/min)            | <b>656</b>         |                       |
| $N$ (min <sup>-1</sup> ) |                    |                       |
| $f$ (in/rev)             | <b>0.006</b>       |                       |
| $F$ (in/min)             |                    |                       |
| $ap$ (in)                | <b>0.02~0.039</b>  |                       |
| Coolant                  | <b>Emulsion</b>    |                       |

## Success story

|              |                   |
|--------------|-------------------|
| Industry     | General machinery |
| Workpiece    | Bar               |
| Material     | C45               |
| Test purpose | Tooling cost      |
| Machine      | Lathe             |

|                          |                   |                                |
|--------------------------|-------------------|--------------------------------|
| Current tool             | Insert            | TNMG 160404R-VF CT3000         |
|                          | Holder            |                                |
| Tool life                | <b>30pcs/edge</b> |                                |
| $vc$ (ft/min)            | 315               | Tool life must cover one shift |
| $N$ (min <sup>-1</sup> ) |                   |                                |
| $f$ (in/rev)             | 0.005             |                                |
| $F$ (in/min)             |                   |                                |
| $ap$ (in)                | 0.039             |                                |
| Coolant                  | Wet               |                                |

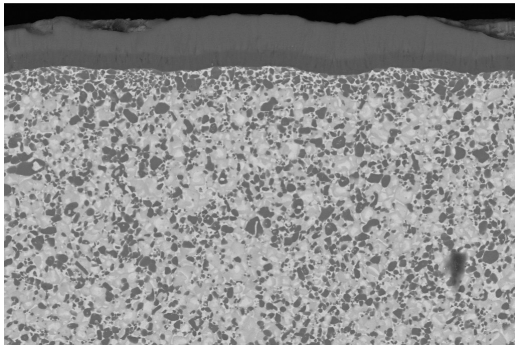


|                          |                    |                                                |
|--------------------------|--------------------|------------------------------------------------|
| Achteck tool             | Insert             | TNMG 160404R-M1T AT202                         |
|                          | Holder             |                                                |
| Tool life                | <b>152pcs/edge</b> |                                                |
| $vc$ (ft/min)            | 315                | Tool life is 5 times more than the current one |
| $N$ (min <sup>-1</sup> ) |                    |                                                |
| $f$ (in/rev)             | 0.005              |                                                |
| $F$ (in/min)             |                    |                                                |
| $ap$ (in)                | 0.039              |                                                |
| Coolant                  | Wet                |                                                |

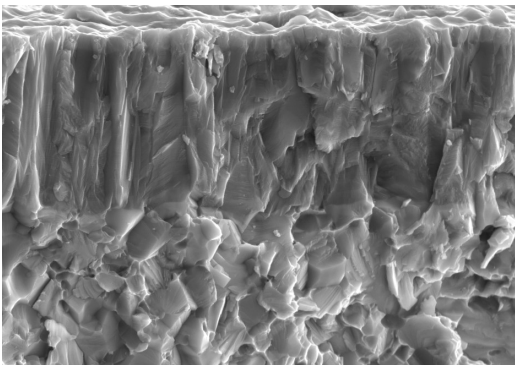
## AT210A grade features:

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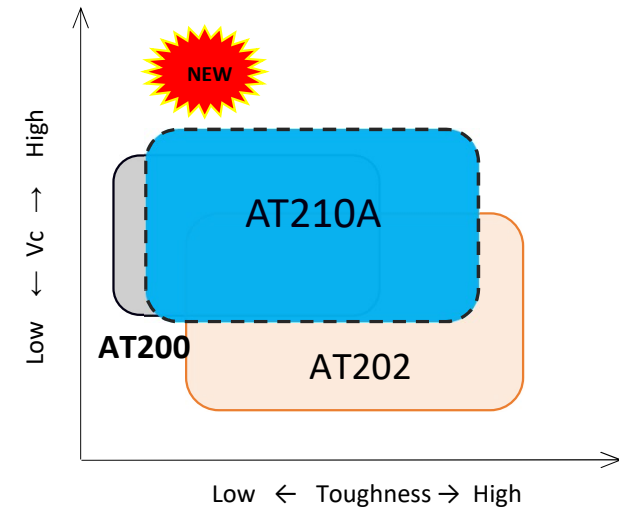
The substrate is a combination of super-fine crystal and complex binder. Nano-structured coating is good for the steel finish turning and high productivity.



- Gradient transition layer balanced the wear resistance and toughness.
- Super fine crystal combined with complex binder for excellent surface finish.



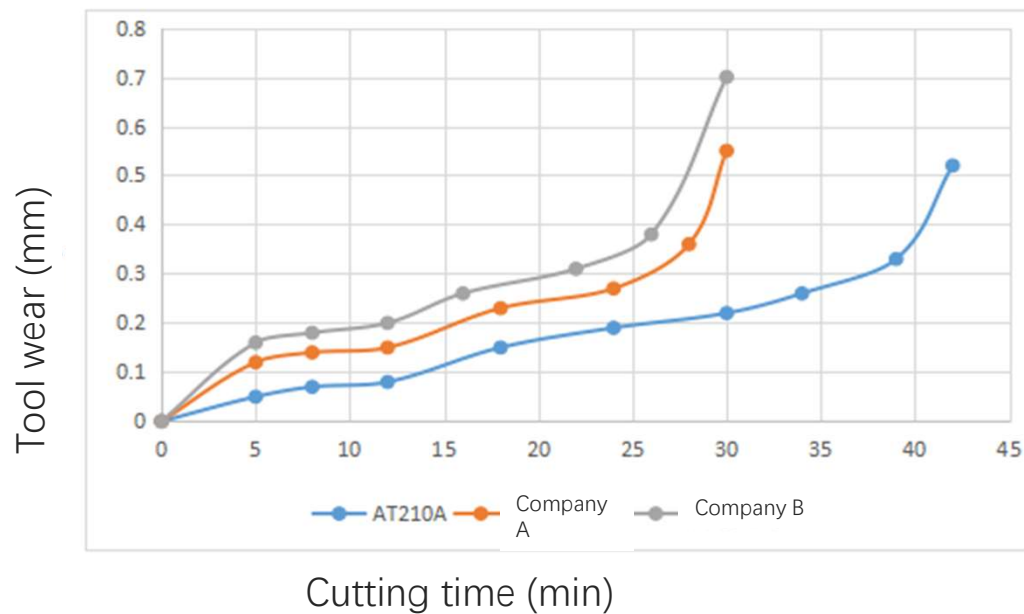
- Nano-structure coating has higher coating adhesion, anti-oxidation and longer tool life.
- Suitable for steel continuous and light medium turning.





# AT210A wear resistance test

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Cutting data

Insert: CNMG 120408\*\*

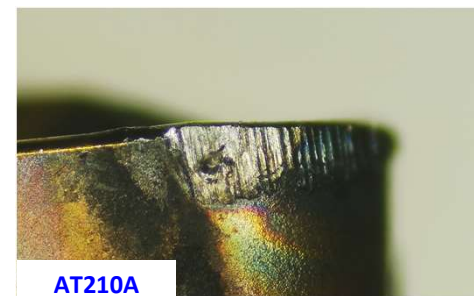
Vc=820 ft/min

f=0.008 in/rev

ap=0.039 in

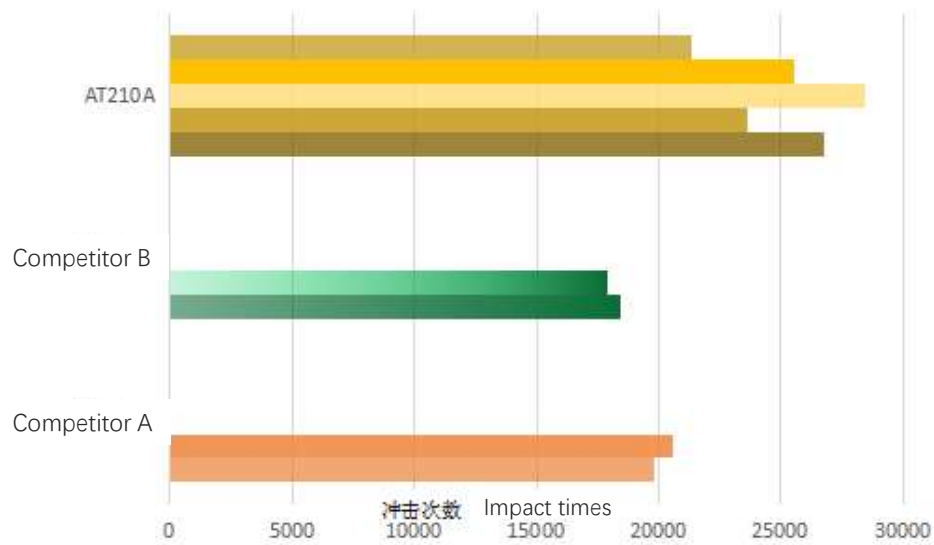
Material: 4340#

Coolant: Wet



# AT210A anti-edge breakage test

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## Cutting data

Insert: CNMG 120408\*\*

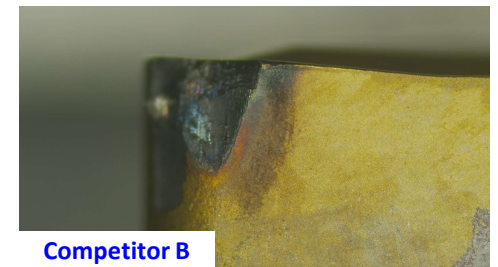
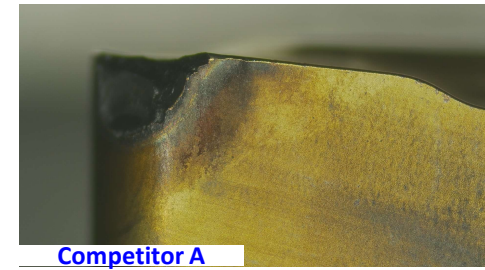
Material: C45

Vc=492 ft/min

Coolant: Wet

f=0.008 in/rev

ap=0.039 in

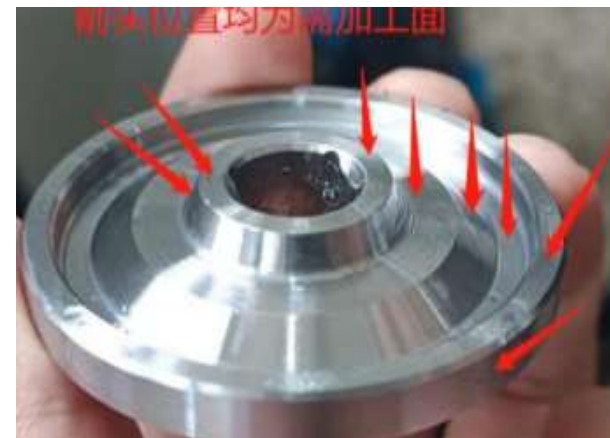




## AT210A Success story

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| Brand           | Current tool                                                            | ACHTECK                   |
|-----------------|-------------------------------------------------------------------------|---------------------------|
| Machine Tool    | Horizontal CNC lathe                                                    |                           |
| Material        | C45                                                                     |                           |
| Holder          | 2525                                                                    | 2525                      |
| Insert          | VBMT 110304 PP PV720                                                    | VBMT 110304E-PB1 AT210A   |
| Geometry        | PP                                                                      | PB1                       |
| Application     | OD and face rough turning                                               | OD and face rough turning |
| Vc(ft/min)      | 250-1030                                                                | 250-1030                  |
| f(in/rev)       | 0.006                                                                   | 0.006                     |
| ap(in)          | 0.012                                                                   | 0.012                     |
| Coolant         | Emulsion                                                                | Emulsion                  |
| Tool life (pcs) | 143                                                                     | 172                       |
| Result          | Reduced tool changing time and tooling cost. Increased tool life by 20% |                           |



## AT210A Success story

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| Brand           | Current tool                                                                 | ACHTECK                   |
|-----------------|------------------------------------------------------------------------------|---------------------------|
| Machine tool    | Horizontal CNC Lathe                                                         |                           |
| Workpiece       | Gear 20CrMo                                                                  |                           |
| Holder          | 2525                                                                         | 2525                      |
| Insert          | CCMT 09T304 HQ PV720                                                         | CCMT 09T304E-PB1 AT210A   |
| Geometry        | HQ                                                                           | PB1                       |
| Application     | OD and face rough turning                                                    | OD and face rough turning |
| Vc(ft/min)      | 407                                                                          | 407                       |
| f(in/rev)       | 0.003                                                                        | 0.003                     |
| ap(in)          | 0.02                                                                         | 0.02                      |
| Coolant         | Emulsion                                                                     | Emulsion                  |
| Tool life (pcs) | 220                                                                          | 280                       |
| Result          | Reduced tool changing time, reduced tool cost and increased tool life by 27% |                           |



## AT210A Success story

·ACHTECK·

| Brand           | Current tool               | ACHTECK                 |
|-----------------|----------------------------|-------------------------|
| Machine tool    | Swiss Tool Automatic lathe |                         |
| Workpiece       | 55Cr HRC39-43              |                         |
| Holder          | 2020                       | 2020                    |
| Insert          | DCMT 11T304 HQ PV710       | DCMT 11T304E-PC2 AT210A |
| Geometry        | HQ                         | PC2                     |
| Application     | OD finish turning          | OD finish turning       |
| Vc(ft/min)      | 230-492                    | 230-492                 |
| f(in/rev)       | 0.002                      | 0.002                   |
| ap(in)          | 0.075                      | 0.075                   |
| Coolant         | Emulsion                   | Emulsion                |
| Tool life (pcs) | 400                        | 400                     |
| Result          | CPP has dropped by 23%     |                         |



## AT210A Success story

·ACHTECK·

| Brand           | Current tool              | ACHTECK                   |
|-----------------|---------------------------|---------------------------|
| Machine tool    | Horizontal CNC lathe      |                           |
| Workpiece       | Gear ring C45             |                           |
| Holder          | 2525                      | 2525                      |
| Insert          | VNMG 160408 PP PV720      | VNMG 160408E-BS AT210A    |
| Geometry        | PP                        | PD5                       |
| Application     | OD and face rough turning | OD and face rough turning |
| Vc(ft/min)      | 984                       | 984                       |
| f(in/rev)       | 0.009                     | 0.009                     |
| ap(in)          | 0.008                     | 0.008                     |
| Coolant         | Emulsion                  | Emulsion                  |
| Tool life (pcs) | 230                       | 230                       |
| Result          | CPP has dropped by 17%    |                           |



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# 03

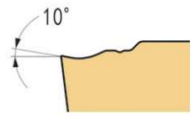
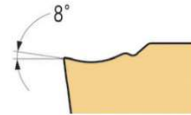
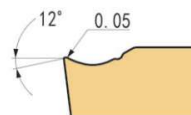
## Grooving





# Geometry-double cutting edges

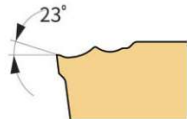
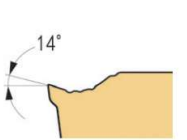
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| Geometry | Insert                                                                              | Shape of cutting edge                                                               | Description                                                                                                                                                                                                                                                  | Insert Width (in) |             |         |           |               |               |         |                   |         |
|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|---------|-----------|---------------|---------------|---------|-------------------|---------|
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | External grooving |             |         |           |               | Face grooving |         | Internal grooving |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | Grooving          | Parting off | Turning | Profiling | Under cutting | Grooving      | Turning | Grooving          | Turning |
| CS       |    |    | <ul style="list-style-type: none"><li>● Used in parting off &amp; grooving stainless steel, heat resistant alloy and low carbon steel</li><li>● For low feed rate application</li></ul>                                                                      | 0.079             | 0.079       | -       | -         | -             | 0.118         | -       | 0.118             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.118             | 0.118       |         |           |               | -             | -       |                   |         |
| CM       |    |    | <ul style="list-style-type: none"><li>● Used in parting off &amp; grooving low carbon steel and stainless steel</li><li>● For sticky material, pipe fitting, thin-walled part parting off, low cutting force</li><li>● For low to medium feed rate</li></ul> | 0.079             | 0.079       |         |           |               | -             |         | -                 |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.118             | 0.118       |         |           |               | 0.118         |         | 0.118             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.157             | 0.157       | -       | -         | -             | 0.157         | -       | 0.157             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.197             | 0.197       |         |           |               | 0.197         |         | 0.197             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.236             | 0.236       |         |           |               | 0.236         |         | 0.236             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.315             | 0.315       |         |           |               | -             |         | -                 |         |
| CH       |  |  | <ul style="list-style-type: none"><li>● Used in parting off and grooving steel, alloy steel and stainless steel with high hardness and toughness.</li><li>● Strong cutting edge</li><li>● For parting off and grooving at medium to high feed rate</li></ul> | 0.079             | 0.079       |         |           |               | -             |         | -                 |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.118             | 0.118       |         |           |               | 0.118         |         | 0.118             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.157             | 0.157       | -       | -         | -             | 0.157         | -       | 0.157             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.197             | 0.197       |         |           |               | 0.197         |         | 0.197             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.236             | 0.236       |         |           |               | 0.236         |         | 0.236             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.315             | 0.315       |         |           |               |               |         |                   | 0.315   |



# Geometry-double cutting edges

·ACHTECK·

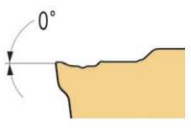
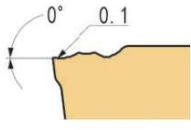
| Geometry | Insert                                                                              | Shape of cutting edge                                                               | Description                                                                                                                                                                                                                                                                                  | Insert Width (in)   |                     |                     |           |               |                     |                     |                     |                     |
|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------|---------------|---------------------|---------------------|---------------------|---------------------|
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | External grooving   |                     |                     |           |               | Face grooving       |                     | Internal grooving   |                     |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | Grooving            | Parting off         | Turning             | Profiling | Under cutting | Grooving            | Turning             | Grooving            | Turning             |
| GS       |    |    | <ul style="list-style-type: none"><li>● Excellent chip breaking, suitable for grooving and finish turning.</li><li>● Geometry for finish machining, low cutting force, low feed, excellent surface quality.</li><li>● Ground insert, high precision and positioning repeatability.</li></ul> | 0.079<br> <br>0.281 | 0.079<br> <br>0.281 | 0.079<br> <br>0.281 | -         | -             | 0.118<br> <br>0.236 | 0.118<br> <br>0.236 | 0.079<br> <br>0.281 | 0.079<br> <br>0.281 |
| TS       |  |  | <ul style="list-style-type: none"><li>● Multifunctional insert for external, internal turning and grooving, parting off, face grooving and face turning</li><li>● Excellent chip control</li><li>● For low and medium feed rate.</li></ul>                                                   | 0.079               | 0.079               | 0.079               | -         | -             |                     |                     | 0.079               | 0.079               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.118               | 0.118               | 0.118               |           |               | 0.118               | 0.118               | 0.118               | 0.118               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.157               | 0.157               | 0.157               |           |               | 0.157               | 0.157               | 0.157               | 0.157               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.197               | 0.197               | 0.197               |           |               | 0.197               | 0.197               | 0.197               | 0.197               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.236               | 0.236               | 0.236               |           |               | 0.236               | 0.236               | 0.236               | 0.236               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.315               | 0.315               | 0.315               |           |               | 0.315               | 0.315               | 0.315               | 0.315               |





# Geometry-double cutting edges

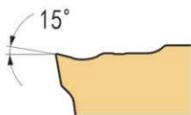
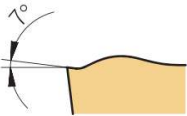
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| Geometry | Insert                                                                              | Shape of cutting edge                                                               | Description                                                                                                                                                                                                                             | Insert Width (in) |             |         |           |               |               |         |                   |         |
|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|---------|-----------|---------------|---------------|---------|-------------------|---------|
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | External grooving |             |         |           |               | Face grooving |         | Internal grooving |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | Grooving          | Parting off | Turning | Profiling | Under cutting | Grooving      | Turning | Grooving          | Turning |
| TM       |    |    | <ul style="list-style-type: none"><li>● Multifunctional insert for external, internal turning and grooving, parting off, face grooving and face turning</li><li>● Stronger cutting edge design</li><li>● For medium feed rate</li></ul> | 0.079             | 0.079       | 0.079   | -         | -             | 0.118         | 0.118   | 0.079             | 0.079   |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.118             | 0.118       | 0.118   |           |               |               |         | 0.118             | 0.118   |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.157             | 0.157       | 0.157   |           |               |               |         | 0.157             | 0.157   |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.197             | 0.197       | 0.197   |           |               |               |         | 0.197             | 0.197   |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.236             | 0.236       | 0.236   |           |               |               |         | 0.236             | 0.236   |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.315             | 0.315       | 0.315   |           |               |               |         | 0.315             | 0.315   |
| RM       |  |  | <ul style="list-style-type: none"><li>● External grooving, turning, profiling</li><li>● Medium feed rate</li></ul>                                                                                                                      | 0.079             | -           | 0.079   | 0.079     | 0.079         | 0.118         | 0.118   | 0.079             | 0.079   |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.118             |             | 0.118   | 0.118     | 0.118         |               |         | 0.118             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.157             |             | 0.157   | 0.157     | 0.157         |               |         | 0.157             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.197             |             | 0.197   | 0.197     | 0.197         |               |         | 0.197             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.236             |             | 0.236   | 0.236     | 0.236         |               |         | 0.236             |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                         | 0.315             |             | 0.315   | 0.315     | 0.315         |               |         | 0.315             |         |



# Geometry-double cutting edges

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| Geometry         | Insert                                                                             | Shape of cutting edge                                                              | Description                                                                                                                                                                                           | Insert Width (in)   |             |                     |           |               |               |         |                     |                     |
|------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------|---------------------|-----------|---------------|---------------|---------|---------------------|---------------------|
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       | External grooving   |             |                     |           |               | Face grooving |         | Internal grooving   |                     |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       | Grooving            | Parting off | Turning             | Profiling | Under cutting | Grooving      | Turning | Grooving            | Turning             |
| RA               |   |   | <ul style="list-style-type: none"> <li>● For turning and profiling aluminum alloy</li> <li>● High positive rake angle and sharp cutting edge</li> <li>● Ground inserts with high precision</li> </ul> | 0.118               | -           | 0.118               | 0.118     | 0.118         | 0.118         | 0.118   | 0.118               | 0.118               |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       | 0.157               |             | 0.157               | 0.157     | 0.157         | 0.157         | 0.157   | 0.157               | 0.157               |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       | 0.197               |             | 0.197               | 0.197     | 0.197         | 0.197         | 0.197   | 0.197               | 0.197               |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       | 0.236               |             | 0.236               | 0.236     | 0.236         | 0.236         | 0.236   | 0.236               | 0.236               |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       | 0.315               |             | 0.315               | 0.315     | 0.315         | 0.315         | 0.315   | 0.315               | 0.315               |
| Precision ground |  |  | <ul style="list-style-type: none"> <li>● Ground insert with high precision</li> <li>● Complete product offering</li> <li>● Good surface quality</li> </ul>                                            | 0.039<br> <br>0.315 | -           | 0.087<br> <br>0.315 | 0.118     | 0.118         | 0.118         | 0.118   | 0.087<br> <br>0.315 | 0.087<br> <br>0.315 |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       |                     |             |                     | 0.157     | 0.157         | 0.157         | 0.157   |                     |                     |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       |                     |             |                     | 0.189     | 0.189         | 0.189         | 0.189   |                     |                     |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       |                     |             |                     | 0.197     | 0.197         | 0.197         | 0.197   |                     |                     |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       |                     |             |                     | 0.236     | 0.236         | 0.236         | 0.236   |                     |                     |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       |                     |             |                     | 0.315     | 0.315         | 0.315         | 0.315   |                     |                     |
|                  |                                                                                    |                                                                                    |                                                                                                                                                                                                       |                     |             |                     |           |               |               |         |                     |                     |



## Holder-External Turning and Grooving

| Product code      |                                                                                     | Holder size(mm) | Ap(in) | Insert  | Width(in) | Insert radius(in) |
|-------------------|-------------------------------------------------------------------------------------|-----------------|--------|---------|-----------|-------------------|
| <b>ATSER/L</b>    |    | 16X16           | 0.315  | ACD/ATD | 0.079     | 0.008             |
|                   |                                                                                     |                 |        |         |           |                   |
|                   |                                                                                     | 25X25           | 1.417  |         | 0.315     | 0.157             |
| <b>ATSER/L-SW</b> |    | 10X10           | 0.394  | ACD/ATD | 0.079     | 0.008             |
|                   |                                                                                     |                 |        |         |           |                   |
|                   |                                                                                     | 20X20           | 0.787  |         | 0.118     |                   |
| <b>AGUER/L</b>    |  | 16X16           | 0.118  | ATD     | 0.079     | 0.008             |
|                   |                                                                                     |                 |        |         |           |                   |
|                   |                                                                                     | 25X25           | 0.138  |         | 0.236     | 0.118             |



## Holder-Face Grooving and Turning

| Product code |                                                                                     | Holder size(mm)     | Ap(in)              | ?  | Insert  | Width(in)           | Insert Radius(in)   |
|--------------|-------------------------------------------------------------------------------------|---------------------|---------------------|----|---------|---------------------|---------------------|
| ATSFR/L      |    | 25X25               | 0.394<br> <br>0.787 | 35 | ACD/ATD | 0.118<br> <br>0.236 | 0.008<br> <br>0.118 |
| AGSFR/L      |   | 16X16<br> <br>25X25 | 0.181               | —  | ACD/ATD | 0.079<br> <br>0.236 | 0.008<br> <br>0.118 |
| ATPFR/L      |  | 25X25               | 0.394<br> <br>0.787 | 30 | ATD     | 0.118<br> <br>0.236 | 0.008<br> <br>0.118 |



# Holder-Internal Turning and Grooving

| Product code |                                                                                     | Holder size(mm) | Ap(in) | ?  | Insert  | Width(in) | Insert Radius(in) |
|--------------|-------------------------------------------------------------------------------------|-----------------|--------|----|---------|-----------|-------------------|
| ATPIR/L      |    | 20              | 0.197  | 25 | ACD/ATD | 0.079     | 0.008             |
|              |                                                                                     |                 |        |    |         |           |                   |
|              |                                                                                     | 50              | 0.551  |    |         | 0.315     | 0.157             |
| ATGIR/L      |   | 25              | 0.11   | —  | ATG     | 0.013     | 0.002             |
|              |                                                                                     |                 |        |    |         |           |                   |
|              |                                                                                     | 32              | 0.118  |    |         | 0.189     | 0.079             |
| ATSIR/L      |  | 25              | 0.472  | 28 | ACD/ATD | 0.118     | 0.008             |
|              |                                                                                     |                 |        |    |         |           |                   |
|              |                                                                                     | 32              |        |    |         | 0.157     | 0.079             |



## Grade introduction

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| No. | ISO range | Grade  | Coat<br>ing | Main<br>Applica<br>tion | Description                                                                                                                                                                  | Supple-<br>ment | Description                                                                      |
|-----|-----------|--------|-------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------|
| 1   | S01-20    | AP130S | PVD         | S                       | PVD coating with hard superfine substrate, with excellent wear resistance. Suitable for super alloy, titanium alloy and hardened steel                                       | M               |                                                                                  |
| 2   | M10-30    | AP301U | PVD         | M                       | Grade with versatility, can be used in different material and various grooving applications                                                                                  | P/S             | Universal for steel grooving, continuous to interrupted                          |
| 3   | M20-40    | AP330M | PVD         | M                       | High toughness, suitable for low speed to medium speed deep grooving and parting off. In the deep grooving and interrupted grooving conditions, it has excellent performance | P               | Suitable for steel deep grooving and interrupted grooving at low to medium speed |
| 4   | P10-30    | AC230P | CVD         | P                       | Suitable for high cutting speed grooving, with excellent wear resistance.                                                                                                    | K               | Suitable for gray cast iron and nodular cast iron high cutting speed grooving    |
| 5   | N01-20    | AW100K | —           | N                       | For aluminum alloy rough to finishing grooving                                                                                                                               | —               |                                                                                  |
| 6   | K10-K30   | AC130K | CVD         | K                       | Suitable for gray cast iron and nodular cast iron high cutting speed grooving                                                                                                | P               | Suitable for high cutting speed grooving, with excellent wear resistance         |

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# 04

## Swiss tool





◆ **Swiss tools**

Automobile



Aerospace

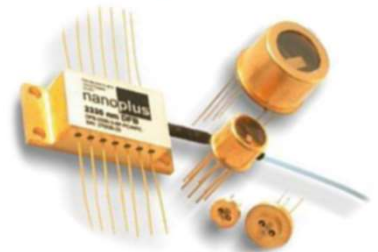


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**Swiss Tool**



Communication



Watch



Medical equipment

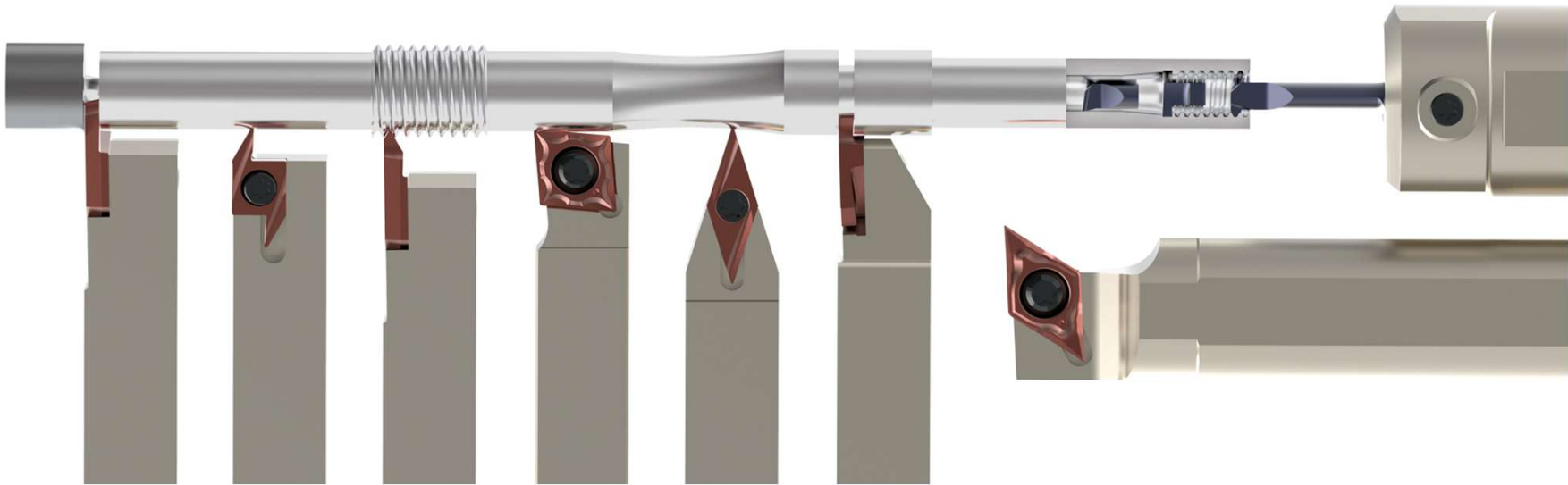


3C industry



## ◆ Swiss tool machining materials

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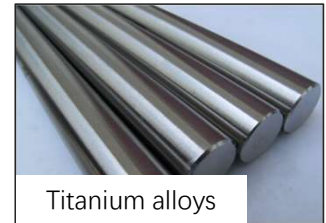
Stainless steel



Copper



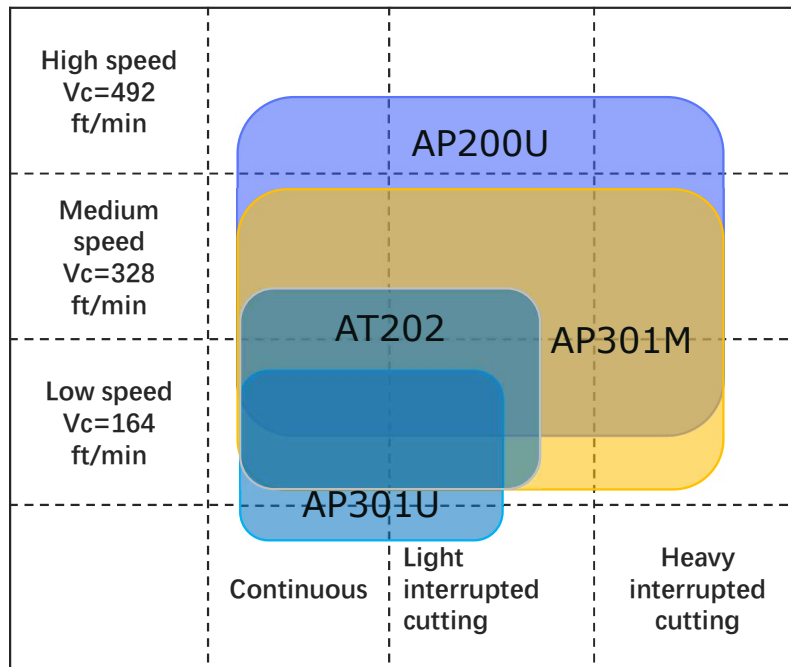
Aluminum alloys



Titanium alloys

## ■ Swiss tool-workpiece materials

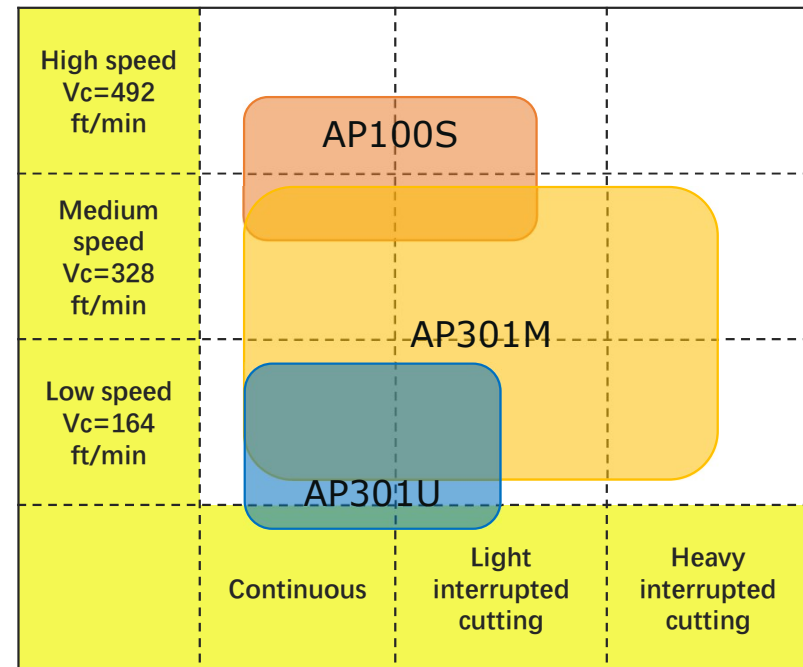
### Steel (carbon steel, soft steel)



- **First Recommended Grade: AP200U**
- Recommended grade for general purpose: AP301M
- Recommended grade for continuous cutting at low to medium speed: AP301U

### Stainless steels

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- **1<sup>st</sup> Recommended Grade: AP301M**
- Recommended grade for continuous cutting at high speed: AP100S
- Recommended grade for continuous cutting at low to medium speed: AP301U

## ◆ Chip Breakers for Swiss tool

**PC2**

Steel and stainless steel semi-finish turning. The design of the rake angle makes the cutting lighter, and the design of the sharp edge effectively avoids the built-up edge and with good chip removal.

**PB1**

Positive rake angle reduces the tendency of built-up-edge. Good surface quality can be obtained for stainless steel and steel turning

**UF**

Sharp cutting edge and large rake angle ensure good cutting result

**LF**

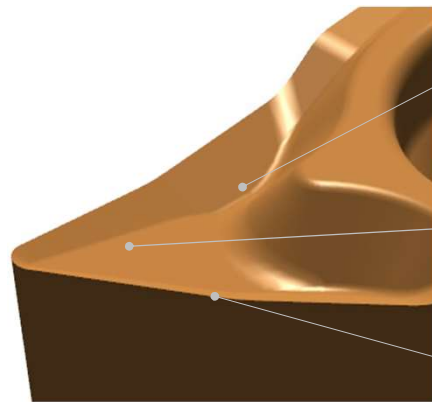
Large rake angle and wide chip breaker design reduced cutting force and improved chip breaking, bi-directional cutting for Swiss machine tool

## Low cutting force Geometry-LF

LF Geometry



Large depth of cut, low cutting force



- Large chip space with mirror finish

Effectively reduces built-up edge

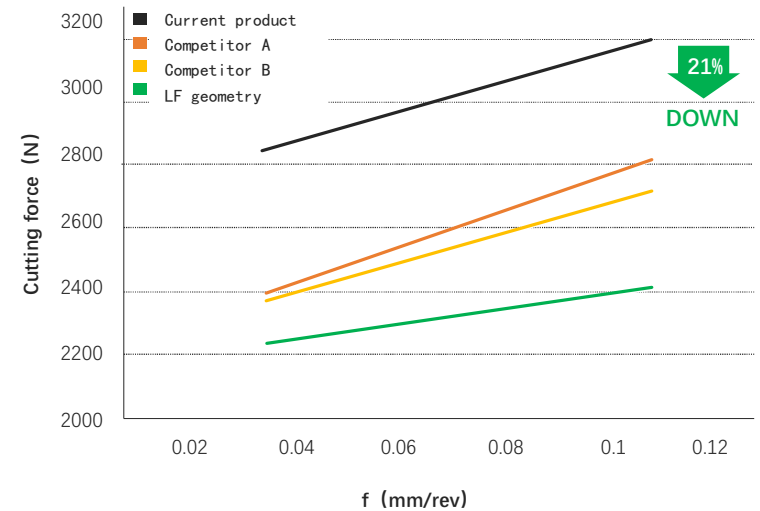
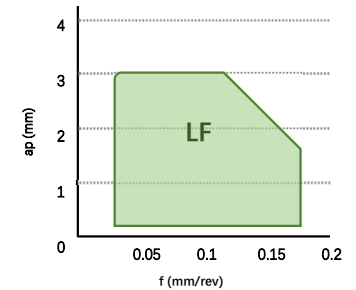
- Sharp, large rake angle; low cutting force design

Large depth of cut and stable chip evacuation.

- Sharp edge with big inclination

Excellent surface finish

Large rake angle ensures smooth chip evacuation  
Depth of cut 0.012~0.12 in

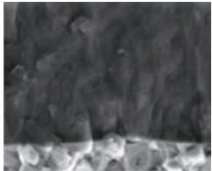


Cutting parameters:  $V_c=393$  ft/min,  $f=0.003$  in/rev,  $a_p=0.039$  in, wet  
Workpiece material: SUS316L

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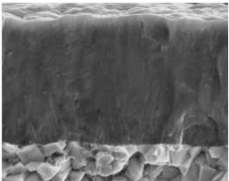
21%  
DOWN

## Low cutting force Geometry-LF



- Smooth coating surface makes cutting more constant, reduces built-up edge, effectively reduces burrs, and get excellent surface finish.

- Sub-micron substrate, good wear resistance, suitable for carbon steel, alloy steel and stainless steel turning.



- New nano-structured coating with high density and strong adhesion force can effectively increase insert hardness and oxidation resistance.

- Sub-micron substrate, good wear resistance, suitable for carbon steel, alloy steel and stainless steel turning.

### ■ Features

1<sup>st</sup> choice for general purpose

M15-M35  
P15-P35

# AP301M

Specialized grade for Swiss Tool, suitable for steel and stainless steel turning, with good built-up edge resistance.

1<sup>st</sup> choice for heat-resistant alloy

S05-S25  
M05-M25

# AP100S

A PVD grade with high hardness and good resistance to plastic deformation, which ensures uniform wear and excellent performance.

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## LF Geometry Case-1



·ACHTECK·

| Brand              | Original tool                                                                                  |  | ACHTECK                 |
|--------------------|------------------------------------------------------------------------------------------------|--|-------------------------|
| Machine            | STAR CNC Automatic Lathe                                                                       |  |                         |
| Component          | Connecting part, 440C                                                                          |  |                         |
| Insert             | DCGT 11T302N-JS AH725                                                                          |  | DCGT 11T302FP-LF AP200U |
| Application        | External Finish Turning                                                                        |  | External Finish Turning |
| Vc(ft/min)         | 328                                                                                            |  | 328                     |
| f(in/rev)          | 0.002                                                                                          |  | 0.002                   |
| ap(in)             | 0.004                                                                                          |  | 0.004                   |
| Coolant            | Emulsion                                                                                       |  | Emulsion                |
| Tool life (pieces) | 5 pieces                                                                                       |  | 50 pieces               |
| Result             | The surface finish request was not reached in the past, and LF successfully machined 50 pieces |  |                         |

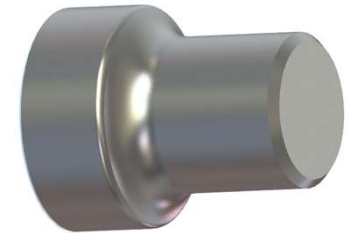


## LF Geometry Case-2



·ACHTECK·

| Brand              | Original tool                        |  | ACHTECK                 |
|--------------------|--------------------------------------|--|-------------------------|
| Machine            | Hardinger CNC Machine                |  |                         |
| Component          | Screws, TC4                          |  |                         |
| Insert             | CCGT 09T304-F BQ320                  |  | CCGT 09T304FP-LF AP301M |
| Application        | External Finish Turning              |  | External Finish Turning |
| Vc(ft/min)         | 98                                   |  | 98                      |
| f(in/rev)          | 0.002                                |  | 0.002                   |
| ap(in)             | 0.008                                |  | 0.008                   |
| Coolant            | Emulsion                             |  | Emulsion                |
| Tool life (pieces) | 100 pieces/edge                      |  | 150 pieces/edge         |
| Result             | Tool life has been increased by 50%. |  |                         |



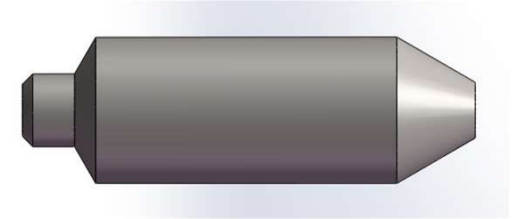


## LF Geometry Case-2



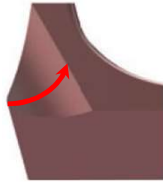
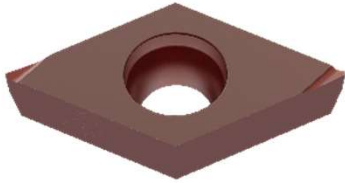
·ACHTECK·

| Brand              | Original tool                                                                                                    | ACHTECK                    |
|--------------------|------------------------------------------------------------------------------------------------------------------|----------------------------|
| Machine            | STAR CNC Automatic Lathe                                                                                         |                            |
| Component          | 9Cr18Mo                                                                                                          |                            |
| Insert             | TFD11FR15AM3-11 DT4                                                                                              | DCGT 11T302FP-LF AP200U    |
| Application        | External Turning Finishing                                                                                       | External Turning Finishing |
| Vc(ft/min)         | 123                                                                                                              | 123                        |
| f(in/rev)          | 0.001                                                                                                            | 0.001                      |
| ap(in)             | 0.006                                                                                                            | 0.006                      |
| Coolant            | Emulsion                                                                                                         | Emulsion                   |
| Tool life (pieces) | 2000 pieces/edge                                                                                                 | 2000 pieces/edge           |
| Result             | The tool life is the same and the surface quality is the same, because the original insert is with a wiper edge. |                            |



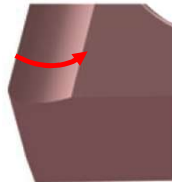
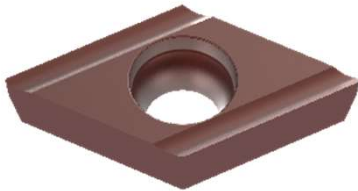
## ◆ Chip Breakers for Swiss tool

·ACHTECK·



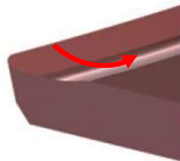
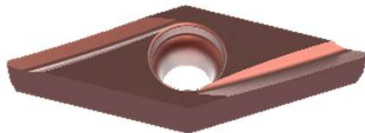
**F**

Low cutting force, controlled chip breaking, used in external and internal finish turning



**M**

Good chip control even when depth of cut changes at low feed conditions

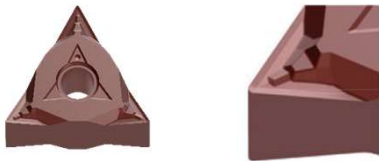


**Y**

Semi-finishing geometry, excellent cutting result, wide application range

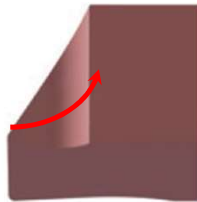
## ◆ Chip Breakers for Swiss tool

·ACHTECK·



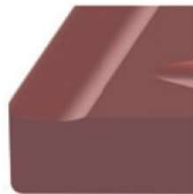
### UF

Chipbreaker for semi-finishing, very positive. Segmented chipbreaker design for a wide range of depth of cut and excellent chipbreaking control.



### F

Low cutting force design presents excellent cutting result and ensures smooth and controllable chip breaking during finishing applications.

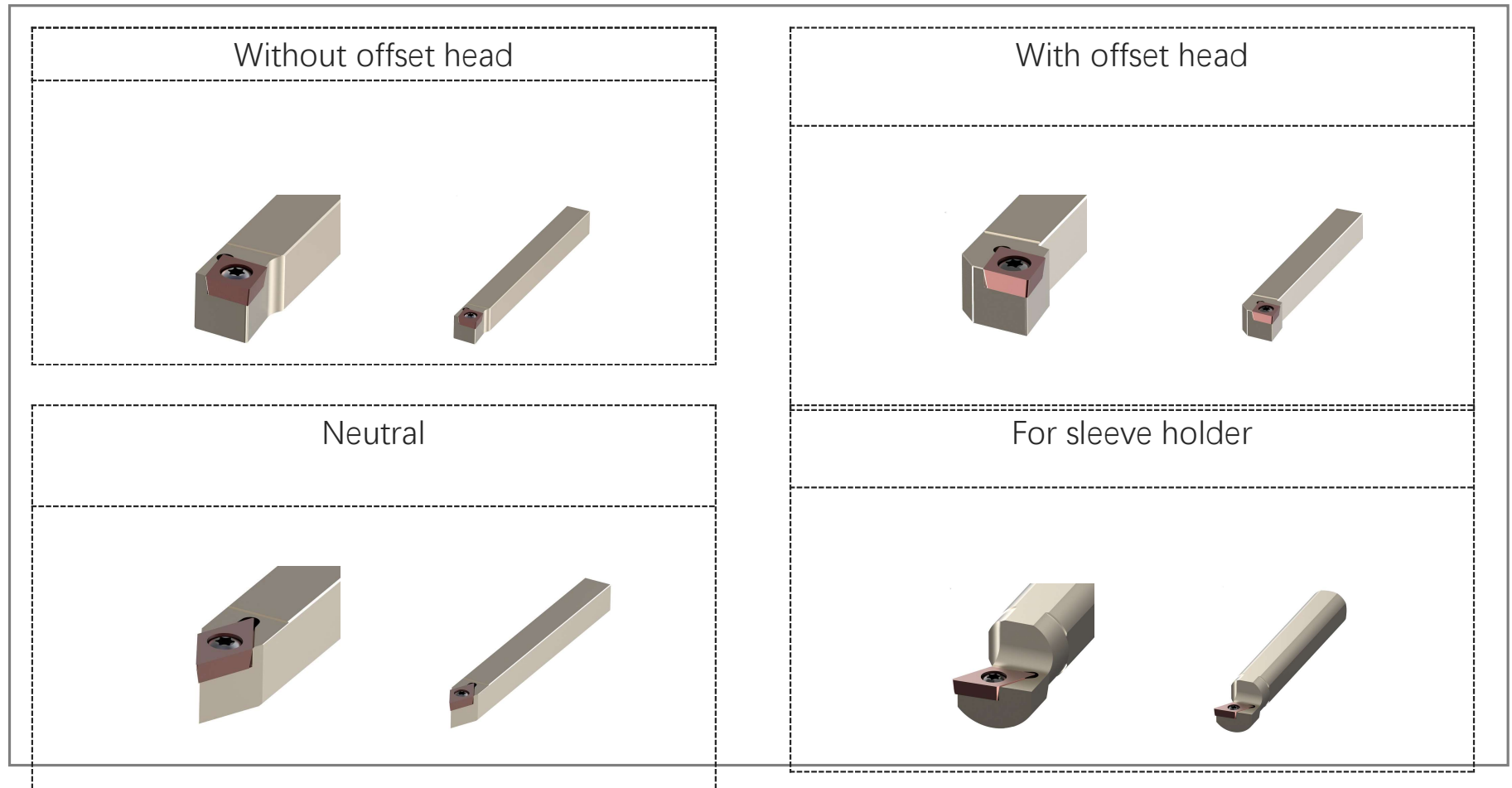


### H

Strong cutting edge for higher feed and versatility

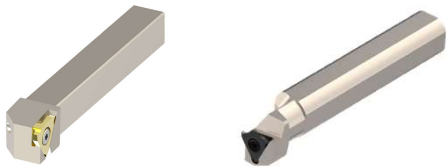
◆ Swiss tool holders for external turning

·ACHTECK·



◆ ASG triangular grooving insert for Swiss tool

·ACHTECK·

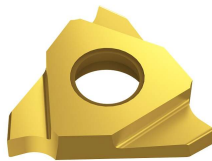


Square toolholder

Customized lengths for CNC automatic lathe, high positioning accuracy, universal toolholder

Round toolholder

Flexible, suitable for limited space in CNC automatic lathes



ASG Triangular groove insert

Three edges, precise ground insert, sharp and large rake angle for good surface finish

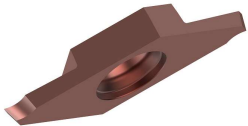
◆ ASW Multi-functional Swiss tool

·ACHTECK·



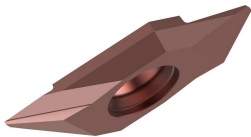
**ASW tool holder**

Multi-purpose, can cover parting, back turning and threading applications, reduce tooling cost



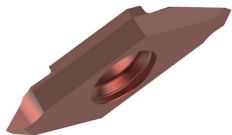
**ASWP parting tool**

Various cutting edge designs for various machining conditions.



**ASWB Back turning tool**

Sharp cutting edge, large rake angle, with large depth of cut and low cutting force

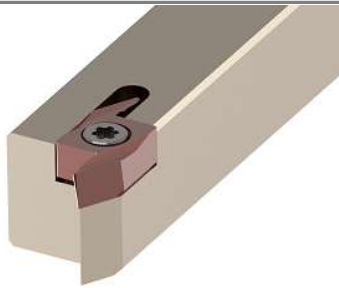


**ASWT threading tool**

Strong cutting edge for big feed and versatility

◆ Swiss tool ABF for back turning

·ACHTECK·



**ABF tool holder**

High-precision tool holder, back-turning tool for CNC automatic lathe

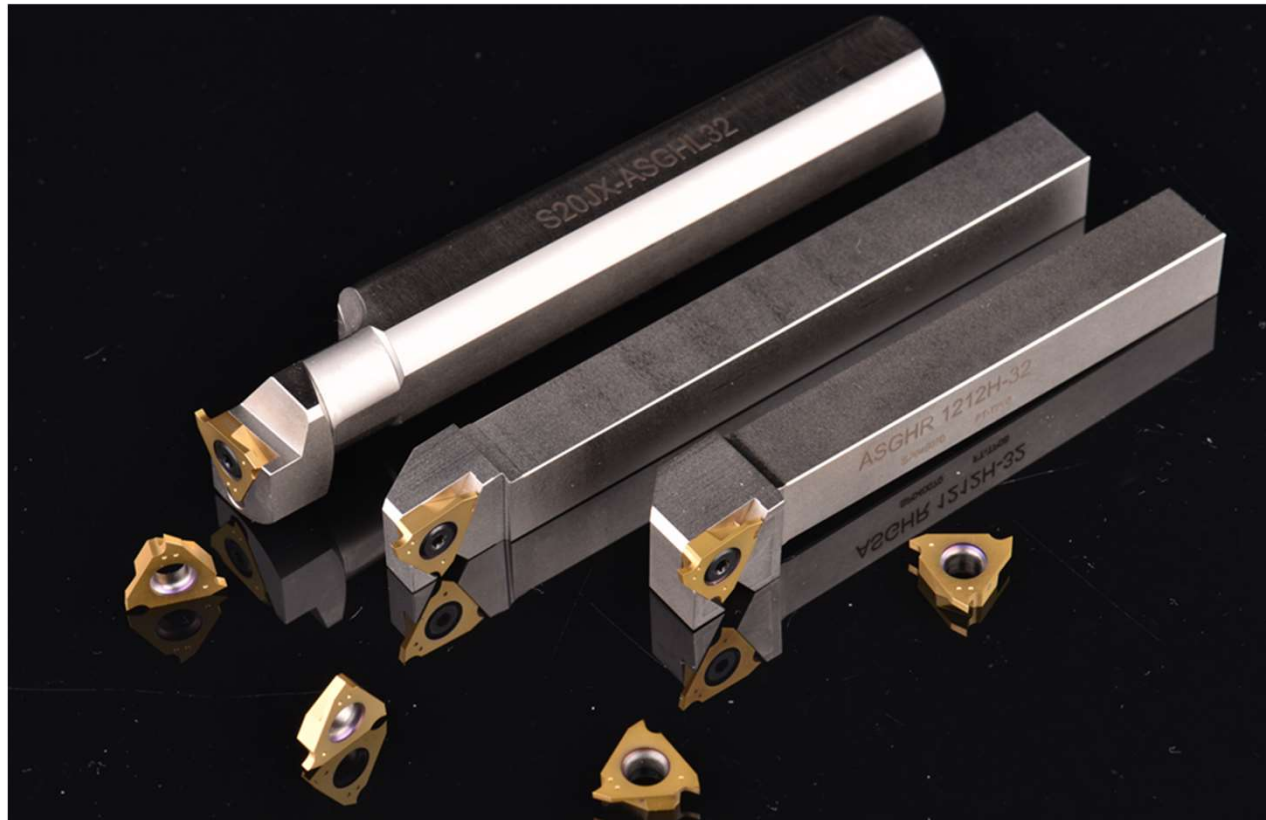


**ABF back turning tool**

Sharp cutting edge, fully ground inserts, reliable chip control, maximum cutting depth at 4mm.

Grooving tools for Swiss Tool automatic lathe

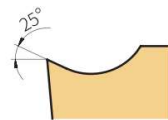
## ASG 32 Series





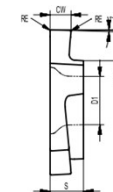
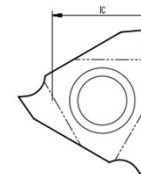
## 3 edge shallow grooving insert-**ASG**

·ACHTECK·

| Geometry  | Insert                                                                              | Edge shape                                                                        | Features                                                                                        | Groove width (in)   |              |                                                                                       |                  |        |                |    |                     |    |
|-----------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------|--------------|---------------------------------------------------------------------------------------|------------------|--------|----------------|----|---------------------|----|
|           |                                                                                     |                                                                                   |                                                                                                 | OD machining        |              |                                                                                       |                  |        | Face machining |    | Internal machining  |    |
|           |                                                                                     |                                                                                   |                                                                                                 | 切槽                  | 切断           | 车削                                                                                    | 仿形               | 越程槽    | 切槽             | 车削 | 切槽                  | 车削 |
| ASG       |    |  | ● Precision insert<br>● Big rake angle, sharp edge for better surface finish<br>● 3 edge design | 0.031<br> <br>0.098 | -            | -                                                                                     | -                | -      | -              | -  | 0.031<br> <br>0.098 | -  |
| Shank     |                                                                                     |                                                                                   | Size (mm)                                                                                       | Max. ap (in)        | Insert (ATG) |                                                                                       | Insert width(in) | ap(in) |                |    |                     |    |
| ASGHR/L   |   |                                                                                   | □10X10                                                                                          | 0.098               |              |   | 0.013            | 0.031  |                |    |                     |    |
|           |                                                                                     |                                                                                   | □25X25                                                                                          |                     |              |                                                                                       | 0.098            | 0.098  |                |    |                     |    |
| S...ASGHL |  |                                                                                   | Ø12                                                                                             | 0.098               |              |  | 0.33             | 0.031  |                |    |                     |    |
|           |                                                                                     |                                                                                   | Ø25.4                                                                                           |                     |              |                                                                                       | 0.098            | 0.098  |                |    |                     |    |

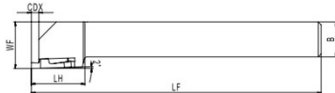
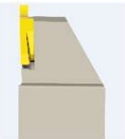
## ASG-Insert

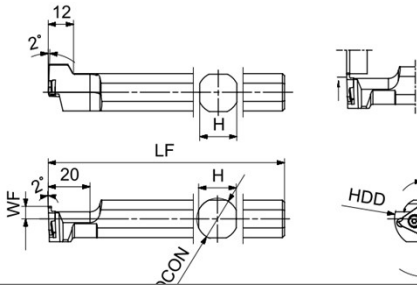
| Product code | IC    | S     | D1    |
|--------------|-------|-------|-------|
| ASG 32-      | 0.375 | 0.125 | 0.181 |



| Product code         | Cutting data |       | Size   |        | AP301U |
|----------------------|--------------|-------|--------|--------|--------|
|                      | Grooving     | CDX   | CW     | RE     |        |
|                      | f (in/rev)   |       |        |        |        |
| ASG 32R/L033T08-R005 | 0.0004-0.002 | 0.031 | 0.013  | 0.002  | ●      |
| ASG 32R/L050T12-R005 | 0.0004-0.002 | 0.047 | 0.02   | 0.002  | ●      |
| ASG 32R/L075T20-R010 | 0.001-0.003  | 0.079 | 0.030  | 0.004  | ●      |
| ASG 32R/L095T20-R010 | 0.001-0.003  | 0.079 | 0.037  | 0.0039 | ●      |
| ASG 32R/L100T20-R010 | 0.001-0.003  | 0.079 | 0.039  | 0.004  | ●      |
| ASG 32R/L120T20-R010 | 0.001-0.003  | 0.079 | 0.0472 | 0.004  | ●      |
| ASG 32R/L125T20-R010 | 0.001-0.003  | 0.079 | 0.049  | 0.004  | ●      |
| ASG 32R/L140T20-R010 | 0.001-0.003  | 0.079 | 0.055  | 0.004  | ●      |
| ASG 32R/L145T20-R010 | 0.001-0.003  | 0.079 | 0.057  | 0.004  | ●      |
| ASG 32R/L150T20-R010 | 0.001-0.003  | 0.079 | 0.059  | 0.004  | ●      |
| ASG 32R/L175T20-R010 | 0.001-0.003  | 0.079 | 0.069  | 0.004  | ●      |
| ASG 32R/L200T25-R010 | 0.001-0.003  | 0.098 | 0.079  | 0.004  | ●      |
| ASG 32R/L250T25-R010 | 0.001-0.003  | 0.098 | 0.098  | 0.004  | ●      |

ASG-Holder

| <div></div> |            |          |       |       |       |       |                                                                                   |                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-------|-------|-------|-------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Product code                                                                                                                                                                                                                                                                                                                                    |            | Size /in |       |       |       |       | Accessory                                                                         |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 |            | H        | B     | LF    | LH    | CDX   | Screw                                                                             | Key                                                                                |
|                                                                                                                                                                                                                                                                                                                                                 |            |          |       |       |       |       |                                                                                   |                                                                                    |
| <br>ASGHR/L                                                                                                                                                                                                                                                    | 1010JX-32F | 0.394    | 0.394 | 4.724 | 0.728 | 0.098 |  |  |
|                                                                                                                                                                                                                                                                                                                                                 | 1212FX-32F | 0.472    | 0.472 | 3.346 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 1212JX-32F | 0.472    | 0.472 | 4.724 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 1616JX-32F | 0.630    | 0.630 | 4.724 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 2020JX-32F | 0.630    | 0.630 | 4.724 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 1010F-32   | 0.394    | 0.394 | 3.150 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 1212H-32   | 0.472    | 0.472 | 3.937 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 1616H-32   | 0.630    | 0.630 | 3.937 | 0.728 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 2020K-32   | 0.787    | 0.787 | 4.921 | 0.787 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 | 2525M-32   | 0.984    | 0.984 | 5.906 | 0.787 | 0.098 |                                                                                   |                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                 |            |          |       |       |       |       | SP040700                                                                          | TP-08                                                                              |

| <div></div> |            |       |       |       |      |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|-------|-------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Product code                                                                                                                                                                      | Size /in   |       |       |       |      | Accessory                                                                           |                                                                                     |
|                                                                                                                                                                                   | DCON       | LF    | WF    | HDD   | DMIN | Screw                                                                               | Key                                                                                 |
| S12F-ASGHL32                                                                                                                                                                      | 0.472      | 3.150 | 0.236 | 0.433 | 1.06 |  |  |
| S14H-ASGHL32                                                                                                                                                                      | 0.551      | 3.937 |       | 0.512 |      |                                                                                     |                                                                                     |
| S15.0H-ASGHL32                                                                                                                                                                    | 0.625      | 4.724 |       | 0.575 |      |                                                                                     |                                                                                     |
| S16H-ASGHL32                                                                                                                                                                      | 0.629<br>9 |       |       |       |      |                                                                                     |                                                                                     |
| S19.0JX-ASGHL32                                                                                                                                                                   | 0.750      |       |       | 0.693 |      |                                                                                     |                                                                                     |
| S20JX-ASGHL32                                                                                                                                                                     | 0.787      |       |       | 0.732 |      |                                                                                     |                                                                                     |
| S22JX-ASGHL32                                                                                                                                                                     | 0.866      |       |       |       |      |                                                                                     |                                                                                     |
| S25JX-ASGHL32                                                                                                                                                                     | 0.984      |       |       | 0.929 |      |                                                                                     |                                                                                     |
| S25.0JX-ASGHL32                                                                                                                                                                   | 1.000      | 4.724 | 0.394 | 0.929 | 1.46 |                                                                                     |                                                                                     |
|                                                                                                                                                                                   |            |       |       |       |      | SP040700                                                                            | TP-08                                                                               |

## ASG Success story

·ACHTECK·

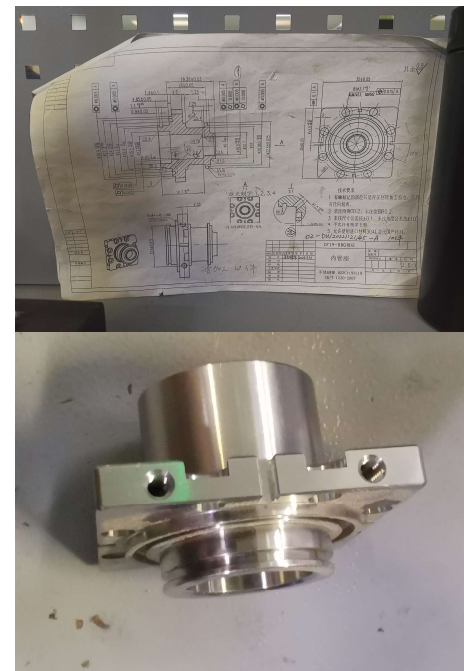
| Brand           | Competitor                                          | ACHTECK                   |
|-----------------|-----------------------------------------------------|---------------------------|
| Machine tool    |                                                     |                           |
| Workpiece       | Valve shaft ( 42CrMn)                               |                           |
| Holder          | interchangeable                                     |                           |
| Insert          | TGF32R-030                                          | ASG 32R033T08-R005 AP301U |
| Geometry        |                                                     |                           |
| Application     | OD shallow grooving                                 | OD shallow grooving       |
| Vc(ft/min)      | 275                                                 | 301                       |
| f(in/rev)       | 0.0004                                              | 0.001                     |
| ap(in)          | 0.02                                                | 0.02                      |
| Coolant         | Coolant                                             | Coolant                   |
| Tool life (pcs) | 40-50 pcs                                           | 120 pcs (OK)              |
| Result          | The tool life is 3 times compared with competitor's |                           |



# ASG Success story

·ACHTECK·

| Brand           | Competitor                   | ACHTECK                   |
|-----------------|------------------------------|---------------------------|
| Machine tool    |                              |                           |
| Workpiece       | Internal pipe seat ( SUS316) |                           |
| Holder          | Interchangeable              |                           |
| Insert          | TGF32R-150                   | ASG 32R150T20-R010 AP301U |
| Geometry        |                              |                           |
| Application     | OD shallow grooving          | OD shallow grooving       |
| Vc(ft/min)      | 230                          | 230                       |
| f(in/rev)       | 0.002                        | 0.002                     |
| ap(in)          | 0.02                         | 0.02                      |
| Coolant         | Coolant                      | Coolant                   |
| Tool life (pcs) | 80 pcs                       | 100 pcs (OK)              |
| Result          | Longer tool life             |                           |



## ASG Success-3

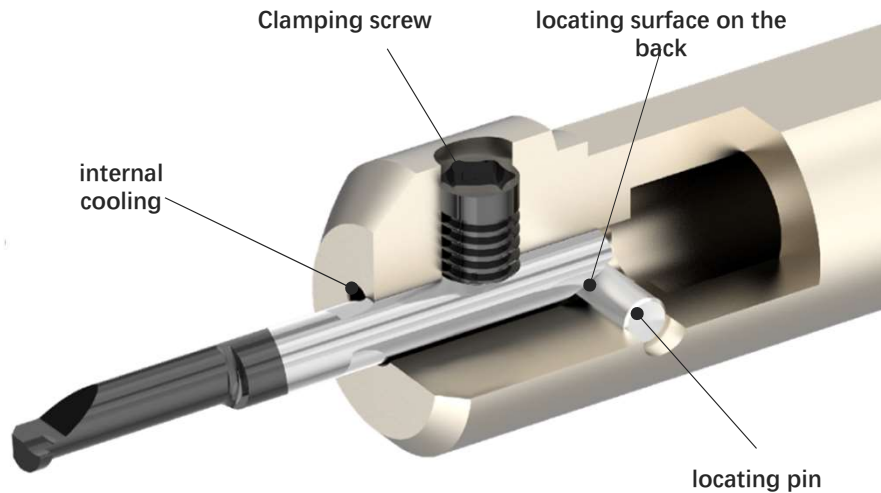
·ACHTECK·

| Brand           | Competitor                          | ACHTECK                   |
|-----------------|-------------------------------------|---------------------------|
| Machine tool    | Horizontal CNC lathe                |                           |
| Workpiece       | Bolt ( 35CrMn)                      |                           |
| Holder          | Interchangeable                     |                           |
| Insert          | TGF32R200-010 PR930                 | ASG 32R200T25-R010 AP301U |
| Geometry        |                                     |                           |
| Application     | OD shallow grooving                 | OD shallow grooving       |
| Vc(ft/min)      | 328                                 | 328                       |
| f(in/rev)       | 0.002                               | 0.002                     |
| ap(in)          | 0.039                               | 0.039                     |
| Coolant         | Coolant                             | Coolant                   |
| Tool life (pcs) | 320-350 pcs                         | 330-350 pcs (OK)          |
| Result          | Same tool life, lower tooling cost. |                           |



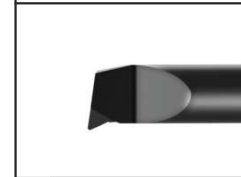
## Solid carbide tools for small diameter boring-ASI series

·ACHTECK·



- ✓ Sleeve holder with cooling holes
- ✓ With positioning function

Boring tool



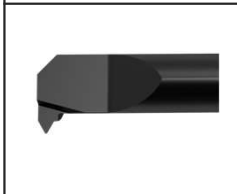
Internal grooving cutter



Face grooving tool



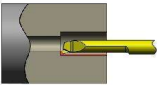
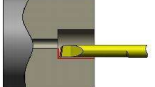
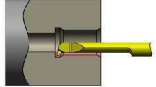
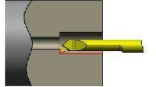
Threading tool

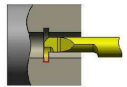
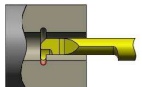
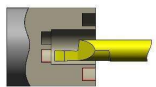
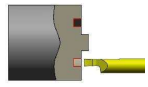


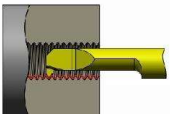
- Small diameter boring
- Solid carbide tools
- Min. machining diameter 0.5mm

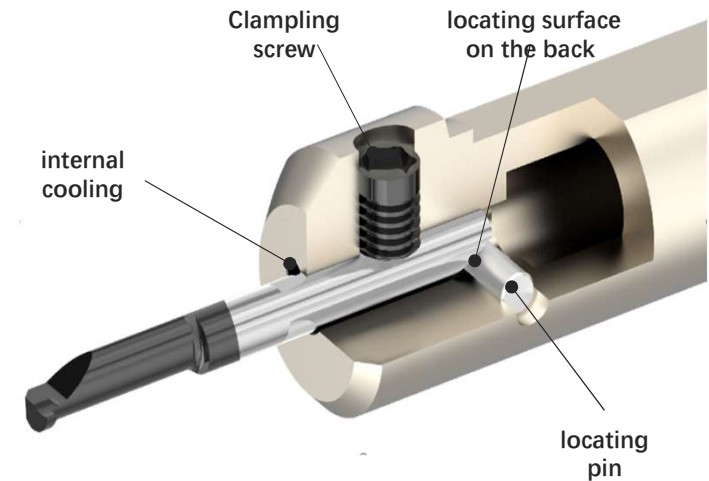
## External tool holders for Swiss Tool

·ACHTECK·

|              | T type                                                                            | E type                                                                            | V type                                                                            | S type                                                                              |
|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Boring tools |  |  |  |  |

|                | Internal S type                                                                   | Internal R type                                                                   | End facing A type                                                                 | End facing B type                                                                   |
|----------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Grooving tools |  |  |  |  |

| Threading tools                                                                     | V type           | M type     | U type    | W type       | N type     | T type       |
|-------------------------------------------------------------------------------------|------------------|------------|-----------|--------------|------------|--------------|
|  | Universal thread | ISO thread | UN thread | WORTH thread | NPT thread | TR 30°thread |





·ACHTECK·



THANKS

